



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/686,592

10/17/2003

Terry Anthony Will

16228 00003

9366

20873 7590 06/12/2007

LOCKE LIDDELL & SAPP LLP

ATTN: DOCKETING DEPT.

2200 ROSS AVENUE

SUITE 2200

DALLAS, TX 75201-6776

EXAMINER

WOLDEMARIAM, AKILILU K

ART UNIT

PAPER NUMBER

2609

MAIL DATE

DELIVERY MODE

06/12/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/686,592

Applicant(s)

WILL ET AL.

Examiner

Aklilu k. Woldemariam

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/17/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on October 17, 2003 was filed after the mailing date of the same day on October 17, 2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1 and 2** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ott et al., hereinafter Ott (U.S. Patent number 5,754,674) in view of Moed et al., thereafter Moed (U.S. Patent number 6,363,162B2) and further in view of Curley et al., "Curley", (U.S. Patent number 5,687,250).

Regarding claim 1, Ott discloses a method for determining the quality of a digital image of a document (see abstract line 1) comprising providing a digital image of a document (see column 2 and 11, lines 48-61), the digital image including a plurality of black and white pixels arranged in rows (see column 6, lines 36-38); locating at least two predefined portions of the digital image (see column 4, lines 1-2); calculating a confidence level for each of the predefined portions of the digital image by comparing the total number of pixels located in the predefined portion to an expected number of

Art Unit: 2609

pixels (see column 3, lines 40-43 and column 8, lines 24, 31 and 38); calculating (see column 8, lines 24, 31 and 38) a text confidence level by identifying groups of touching pixels; calculating an image profile confidence level by identifying the mean number of black pixels per row (see column 6, lines 36-39), the black pixel density (see column 8, lines 20-21), and creating an image confidence level as the product of the confidence levels for the predefined portions (column 11, line 34), the text confidence level and the image profile confidence level.

Ott does not disclose a Standard deviation of the distribution of black pixels in each row and selecting the smaller of the standard deviation of black pixels in each row.

However, Moed discloses a Standard deviation of the distribution of black pixels in each row (see column 13, lines 19-29) and selecting the smaller of the standard deviation of black pixels in each row.

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Moed's standard deviation of black pixels in each row in Ott's verification of digital image quality in order to improve the system that automatically and accurately evaluates the quality of the document image, [Moed's see column 1, lines 65-67].

Ott and Moed do not disclose comparing the calculated image confidence level to a threshold level for determining whether the digital image is acceptable.

However, Curley discloses comparing the calculated image confidence level to a threshold level for determining whether the digital image is acceptable (see column 9, lines 59-62).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Curley's threshold level for determining digital image in Ott's and Moed's verification of digital image quality in order to quantitative measure of image and document quality, [Curley, see column 2, line 65].

Regarding claim 2, Moed discloses the method of claim 1 wherein the document is a bank check (column 1, lines 19-20) and locating the at least two predefined portions of the digital image (see column 1, lines 28-30) includes locating the payee line of the check and the legal amount text of the check (see column 1, lines 25-28).

4. **Claims 3 and 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ott in view of Moed and further in view of Curley and further in view of Higgins et al."Higgins" (U.S Patent number 5,754,671).

Regarding claim 3, Ott discloses a method for determining the quality of a digital image of a document (see abstract line 1) comprising providing a digital image of a document (see column 2, lines 48-61), the digital image including a plurality of black and white pixels arranged in rows (see column 5, line 11 and column 6, lines 36-38); creating an image profile confidence level by identifying the mean number of black pixels per row (see column 2, lines 5-9), the black pixel density (see column 8, lines 20-21); identifying text fields of the digital image (see column 2, lines 50-54); locating lines within the document image (see column 9, lines 4-7); calculating a line area confidence level as a ratio of the number of pixels in characters located above the line in each of the located text fields to an expected number of pixels (see column 9, lines 24-28 and

i.e. boundary means line); calculating a new profile confidence level as the product of the prior updated profile confidence level and the line area confidence level for each of the located text fields (see column 9, line 9).

Ott does not disclose a Standard deviation of the distribution of black pixels in each row, selecting the smaller of the standard deviation of black pixels in each row, determining the number of black pixels in each located text field to identify a character mass for each located text field; reducing the image profile confidence level if the character mass is greater than a minimum character mass to calculate an updated image profile confidence level for each of the located text fields; determining the number of broken characters in each located text field; reducing the updated image profile confidence level by a percentage of the number of broken characters compared to the total number of characters for each located text field;

However, Moed discloses a Standard deviation of the distribution of black pixels in each row (column 7, lines 39-41 and column 13, lines 19-21) and selecting the smaller of the standard deviation of black pixels in each row (column 7, lines 39-41 and column 13, lines 19-21), determining the number of black pixels in each located text field (column 7, lines 40-41) to identify a character mass for each located text field; reducing the image profile (column 12, line 6) confidence level if the character mass is greater than a minimum character mass to calculate an updated image profile confidence level for each of the located text fields; determining the number of broken characters in each located text field (column 5, lines 59-61) ; reducing the updated image profile confidence level by a percentage of the number of broken characters

Art Unit: 2609

compared to the total number of characters for each located text field (column 5, lines 57-61).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Moed's standard deviation of black pixels in each row in Ott's verification of digital image quality in order to identifying and locating relevant information in the document can be improved, [Moed's see column 11, lines 28-29].

Ott and Moed do not disclose comparing the overall document confidence level to a threshold level for determining whether the digital image is acceptable.

However, Curley discloses comparing the overall document confidence level to a threshold level for determining whether the digital image is acceptable (see column 9, lines 59-62).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Curley's threshold level for determining digital image in Ott's and Moed's verification of digital image quality in order to improving a quality of image document, [Curley, see column 2, line 65].

Ott, Moed and Curley do not disclose setting the overall document confidence level to the minimum of the new profile confidence levels for all located text fields.

However, Higgins discloses a setting the overall document confidence level to the minimum of the new profile confidence levels for all located text fields (see column 12, lines 24-25).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Higgins's confidence level in Ott's, Moed's and Curley's verification of digital image quality in order to improve the performance of the system, [Higgins's see column 6, lines 19].

Regarding claim 4, Moed discloses the method of claim 3 wherein the document is a bank check (column 1, lines 19-20) and the text fields are selected from the group consisting of payee name, legal amount, courtesy amount, date and signature (see column 1, lines 24-27).

Conclusion

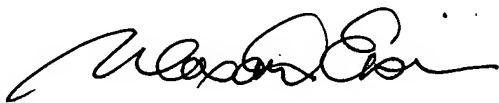
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tse et al. (6,198,z45B1) discloses determining document background for adjusting the dynamic range of an image of the document.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aklilu k. Woldemariam whose telephone number is 571-270-3247. The examiner can normally be reached on Monday-Thursday 6:30 a.m-5:00 p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2609

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alexander Eisen
SPE
Art Unit 2609

A.W.
6/05/2007